

# MSI530

Mariner Kit for use with HP EliteDisplay E233  
23-inch Monitor (Desk Mount)



The HP EliteDisplay E233 23-inch Monitor is marine type approved when it is installed in conjunction with our Mariner Kit MSI530.

The MSI530 Mariner Kit is designed to fit onto any horizontal surface and affords protection against the effects of vibration and shock experienced in the offshore marine environment. The combination has been type tested against IACS Unified Requirement E10 and the relevant sections of IEC60945 (see below right for test details).

This marine type approved combination of hardware and Mariner Kit can be used as the platform for your critical navigation, control, loading and general purpose applications.

Please note that although the monitor does retain its standard functionality we do not offer an automatic dimming function and it cannot therefore be used in the front of the bridge where it may affect night vision. However, the monitor can be used in any area where night vision is not an issue.

**“Steer the right course with  
Mariner Systems”**



## FEATURES OF THE HP ELITEDISPLAY E233 23-INCH MONITOR

- ◆ Style meets substance in a strikingly modern business display crafted for optimal viewing, productivity, and ergonomics
- ◆ Get crisp visuals from any angle on the 1920 x 1080 Full HD resolution, 58.42cm (23-inch) diagonal IPS screen
- ◆ Work with your most frequently-used devices with VGA, HDMI, and DisplayPort™
- ◆ The on-screen display button controls allow quick and easy adjustment of brightness, contrast, and numerous other settings
- ◆ Design the screen for how you work with HP Display Assistant software
- ◆ Reduce power consumption and help lower costs with a low halogen, ENERGY STAR® certified, EPEAT® Gold registered display that meets TCO Certified Edge with 85% Post-Consumer Recycled plastics
- ◆ 99.1% recyclable when properly disposed of at end of life
- ◆ Compliant with the Restrictions of Hazardous Substances (RoHS) directive - 2002/95/EC
- ◆ Designed to comply with the Waste Electrical and Electronic Equipment (WEEE) directive - 2002/96/EC
- ◆ Protected by HP, including a 3 year standard limited warranty

This Mariner system has been tested against the consolidated, 'worst-case' requirements of the following international marine Classification Societies:

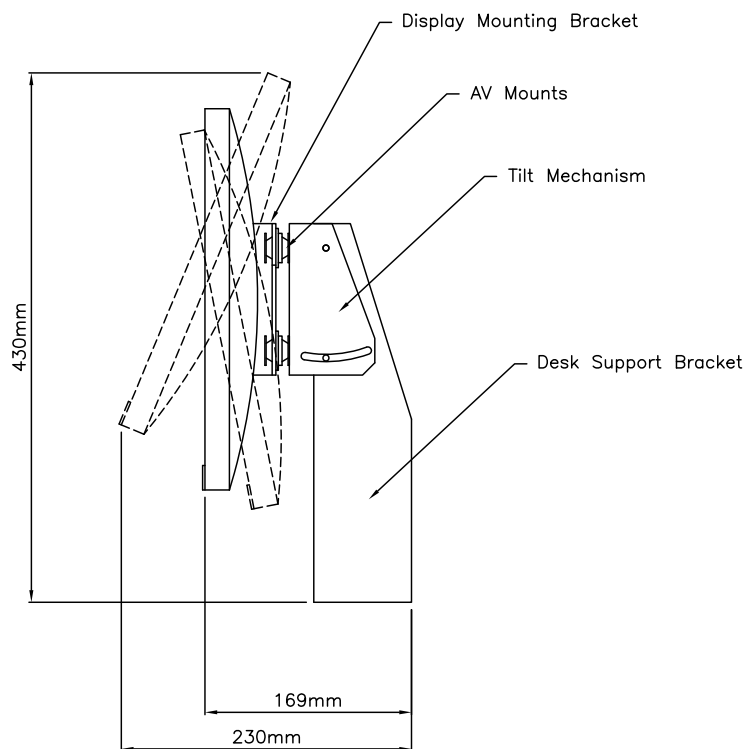
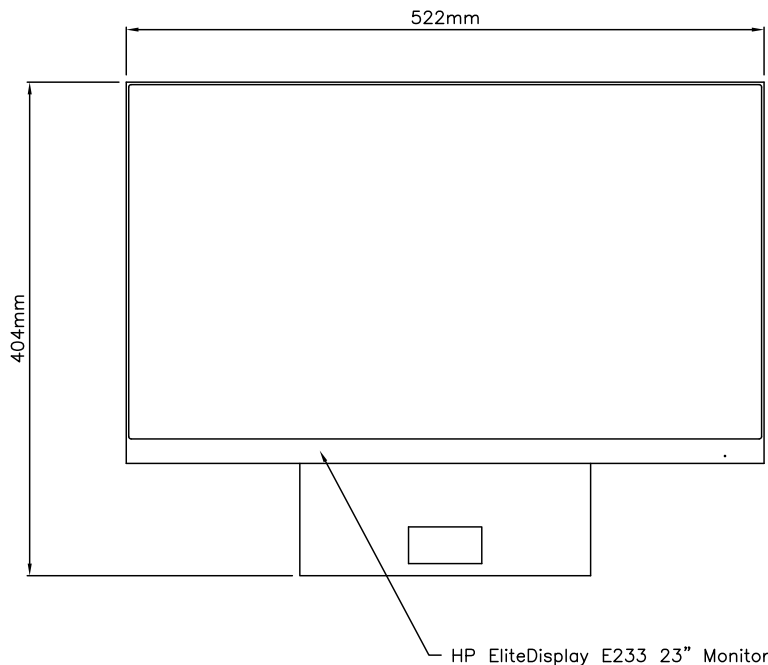
**ABS, BV, CCS, DNV GL, KR, LR, NKK, PRS, RINA**

Tests included within the requirements are as follows:

- > Vibration, Shock, Static and Dynamic Inclination
- > Dry & Damp Heat, Low Temperature
- > Acoustic Noise, Compass Safe Distance
- > High Voltage, Power Supply Variation & Power Supply Failure
- > Conducted LF & RF, Electromagnetic Field
- > Radiated & Conducted Emissions, Electrostatic Discharge
- > Insulation Resistance, Burst / Fast Transients
- > Surge Immunity, Access to Dangerous Voltages

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## OPERATING GUIDELINES

Although all of our equipment is tested against extreme environmental conditions for the purposes of marine type approval, installation should take into account the following guidelines:

- > Keep the monitor away from excessive moisture, direct moisture and the extremes of heat and cold where possible, to ensure that the monitor is operated within the manufacturer's specified operating ranges:

|                    | Operating                       | Non-Operating                      |
|--------------------|---------------------------------|------------------------------------|
| <b>Temperature</b> | +5° to +35°C<br>(+41° to +95°F) | -20° to +60°C<br>(-4° to +140°F)   |
| <b>Humidity</b>    | 20% to 80%<br>(non-condensing)  | 5% to 95%<br>(38.7°C max wet-bulb) |

- > Leave clearance on all vented sides of the monitor to permit sufficient airflow
- > Never restrict airflow into the monitor by blocking any vents or air intakes
- > If the monitor is to be operated within a separate enclosure, suitable ventilation should be provided

By following these guidelines you will maximise the life of your equipment and minimise service costs.

## STATISTICS

|   |   |
|---|---|
| <b>Overall Fitted Dimensions</b>                | <b>522mm (w) x 430mm (h) x 230mm (d)</b>                                      |
| <b>Weight (Mariner Kit only)</b>                | <b>1.4 kg</b>   |
| <b>Weight (including hardware)</b>              | <b>4.6 kg</b>   |
| <b>Panel Type</b>                               | <b>IPS with LED backlight</b>   |
| <b>Viewable Image Area</b>                      | <b>23 in (58.42 cm)</b>   |
| <b>Panel Active Area (w x h)</b>                | <b>20.05 x 11.28 in (50.92 x 28.64 cm)</b>                                    |
| <b>Aspect Ratio</b>                             | <b>16:9</b>   |
| <b>Native Resolution</b>                        | <b>1920 x 1080 @ 60 Hz</b>  |
| <b>Viewing Angle</b>                            | <b>Up to 178 degrees horizontal and 178 degrees vertical</b>                  |
| <b>Brightness</b>                               | <b>250 cd/m<sup>2</sup></b>   |
| <b>Contrast Ratio (typical)</b>                 | <b>1000:1</b>   |
| <b>Dynamic Contrast Ratio (typical)</b>         | <b>5,000,000:1</b>  |
| <b>Response Time (typical)</b>                  | <b>5 ms</b>   |
| <b>Pixel Pitch</b>                              | <b>0.2652 mm</b>  |
| <b>Backlight Lamp Life (to half brightness)</b> | <b>30,000 hours minimum</b>   |
| <b>Buttons</b>                                  | <b>Menu, Function and Power</b>   |
| <b>Plug and Play</b>                            | <b>Yes</b>  |
| <b>Input Connectors</b>                         | <b>DisplayPort™ 1.2, HDMI 1.4, VGA; HDCP support on DisplayPort™ and HDMI</b> |
| <b>USB Ports</b>                                | <b>Three USB 3.0 ports (two downstream &amp; one upstream)</b>                |
| <b>Input Power</b>                              | <b>100 to 240 VAC 50/60 Hz</b>  |
| <b>Typical Power Consumption</b>                | <b>19W</b>  |
| <b>Maximum Power Consumption</b>                | <b>36W</b>  |
| <b>Mariner Kit Tilt Range</b>                   | <b>10 degrees down; 20 degrees up</b>   |